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ABSTRACT

The purpose of this publication is to provide a particular method for conducting personnel selection research and at the same time to report the results of a study in which it was successfully used. A novel and successful type of inservice education was recently initiated by the Ohio State University College of Education in collaboration with Columbus, Ohio, Public Schools. The program is called the Preface Program. The 21 elementary teachers who participated included both Negroes and whites; none of these men and women has previously taught in low-income schooos, although roughly half of them were experienced elsewhere. Twelve psychological-personality instruments were administered to know the participatns better. It seemed reasonable to determine whether certain types of selfhood structures were more susceptible to training for inner city teacher than others. During the school year of the study the performance of each of the the 21 participants was monitored and rated to produce four criterion measures. After scores on the dozen selfhood examinations and the criterion measures were accumulated, first order correlations were calculated between every variable and every other variable. A stepwise regression analysis of each of the criterion measures was used to determine what parsimonious subset of psychological measures could predict each criterion with a reasonable amount of success. (Author/JM)

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PREDICTING TEACHER SUCCESS: THE INNER CITY

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During the course of this study financed by a grant from the Ohio State University's College of Education Research Fund, Robert Strom served as Professor of Education and Psychology; he has since become Chairman, Department of Elementary Education, Arizona State University. David Larimore, formerly Research Associate is now Assistant Professor of Educational Psychology at the University of Kentucky.

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PREDICTING TEACHER SUCCESS: THE INNER CITY

Robert D. Strom and David Larimore

1970

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The Need For Success Prediction

Being ready for the inner city school, embracing appropriate goals, persisting rather than dropping out, and achieving some degree of success are problems that confront teachers as well as students. Ensuring the chances for student success relates directly to elevating the chances for teacher success; likewise, a satisfactory decline in the rate of pupil dropout hinges upon enabling a decline in the rate of teacher turnover.

Although many universities and public school officials of many cities have initiated collaborative training activities to provide better preparation for undergraduates and teachers already assigned to inner city schools, there have not been similar commendable efforts in developing valid screening procedures for those candidates. Few universities that offer training programs for prospective inner city teachers have meaningful selection standards currently in use or being researched.

The prevailing rates of teacher dissatisfaction and pupil unrest combine to urge greater concern, for the social cost of omitting success prediction as a consideration in teacher selection is incalculable.

The importance of enabling teacher success in the urban slum has become increasingly obvious during the 1960's. Less apparent have been the best approaches to bring about improvement. For those who equate high rates of staff turnover with inadequate teaching, the intended solutions center upon recruitment. How can the good teachers be led to leave wherever it is they now are to assume an inner city position? Implicit in this attempt to recruit so-called "good" teachers from other neighborhoods is the assumption that the context has nothing to do with success as a teacher—good teachers are the same everywhere and moving them will in no way alter their effectiveness.[1] Accordingly, proposals have ranged from Galbraith's (1964) call for a national teaching corps of 10,000 of the nation's best educators to local attempts aimed at redefining status positions. School systems are attempting to revise the old image that some "good" teachers will not stay in the inner city because of low status and to eliminate the popular inference that "if one is any good, he will teach elsewhere than the slum." "The appeals being made now are that the inner city job is the toughest and demands the most competent teacher. Moreover, it is the dedicated who choose to work in the inner city." Engendered in this statement is the officious view that

teachers who serve in neighborhoods other than low income are less dedicated.

A more recent and general view of how to improve urban teaching derives from the studies of dissatisfied teachers who claim inadequate preparation for their job as a major cause of transfer and job termination. Supposing teacher preparation rather than recruitment is the best approach to this problem, many universities have initiated undergraduate programs to train students electing to prepare for inner city classrooms. Although commendable, such programs do not at present graduate a sufficient number of candidates to confront an ever-growing population of culturally deprived children. The unfortunate fact is that most new teachers assigned to difficult schools in the nation's major cities have not received any specialized training for this work. Most of these newcomers have had no previous contact with low-income life and no field experience or academic encounter with children of the poor.[2] Many of them attended colleges located outside metropolitan centers and were tutored by professors who with few exceptions lacked experience in a slum setting.

Rather than an emphasis upon recruitment or the urging of preservice preparation, many school leaders have recognized the inservice training approach as the more feasible alternative. However, teachers of culturally deprived children in eight major cities complain that inservice training is seldom relevant and begins at a time during the school year when some first-year staff members are already beset by insurmountable difficulties, others have altered their aspiration from teaching pupils to merely taking care of them, and some have given up altogether (TEPS, 1964). Higher rates of personnel turnover in slum schools than elsewhere and the reported reasons for leaving by those who resign or transfer lend credence to the assertion that inservice help is insufficient or too late. (cf. Passow, 1966; Kornberg, 1963, Groff, 1963)

To overcome shortcomings of the traditional inservice concept, it seems more logical to select new teachers who have some prospect of success and to offer them an inservice program immediately prior to teaching to give them the confidence, attitudes, and understandings that can permit their pupils an education and themselves a chance for a rewarding classroom situation.[3]

Whether improved recruitment schemes or innovative undergraduate programming or a revision of inservice training is perceived as the most significant approach, each has a place for success prediction. Indeed to omit this important consideration will defeat any strategies we devise.[4]

Respecting the Selfhood of Teachers

Predictions of the success of teachers in the inner city may be achieved by a number of means, but the purpose of this publication is to provide a particular method for conducting personnel selection research and at the same time to report the results of a study in which it was successfully used.

A novel and successful type of inservice education was recently initiated by the Ohio State University College of Education in collaboration with Columbus, Ohio, Public Schools. The program is called the Preface Plan. No metropolitan school system previous to the Preface Plan had offered new staff such a concentrated readiness opportunity that begins after being hired but prior to the assumption of classroom duties despite the fact that a large proportion of teachers assigned to urban neighborhoods of low-income are without any experience in working with the disadvantaged. The decision to offer such a preface of planned experiences was based on the rationale that the time factor—when inservice help is provided—might be a crucial determinant influencing the beginning teacher's attitude toward his job, the relevance and effectiveness of his instruction, his degree of satisfaction and length of inner city service. (Strom 1968; 1970)

The 21 elementary teachers who participated included both Negroes and whites; none of these men and women had previously taught in low-income schools, although roughly half of them were experienced elsewhere. To enable a colleague support system from the beginning, five resource teachers and 11 building principals with whom the participants would work during the school year helped plan and assumed responsibilities within the six-week summer workshop.

Earlier consultation with community leaders led to the conviction that to the extent possible, the 21 teacher participants should become aware of the function and activity of local agencies serving the poor community. They should leave their books to go "downtown" and learn firsthand about the welfare department, the juvenile court, the role of the mayor's office in urban renewal, what the churches are doing, and the concerns of organizations like the Urban League and NAACP. They should talk to ADC mothers, visit low-income housing developments, and teach small groups of slum children using video tape for interaction analysis feedback—in general they should get to know their role in the

city's attempt to extricate children of poverty from a life without hope. In alternating teams of three, the participants each engaged in all the recommended experiences.

A second workshop objective involved educating help agents. It was recognized that the influence of resource teachers, principals, and the university researcher directing the program might be more beneficial if they knew something about the selfhood structure of participants assigned to them. To properly offer another person alternatives for actualizing their goals requires knowing something more about them than that they are having difficulty. Help-agents should not offer prescriptive statements without knowing the intended actor well—for the best teacher method is necessarily contingent upon the individual teacher in question and who he is as a person.

To the extent that there is unawareness of a teacher's individual psychosocial attributes, behavioral alternatives may be inadvertently suggested that are inconsonant with the teacher's personality. For example, it is inappropriate to suggest that a teacher with a high need for structure and low tolerance for frustration employ strategies involving great ambiguity and the attendent anxiety. It can also be unwise to counsel a teacher low in measured creative potential to invite much pupil speculation. This does not mean that some teachers cannot with help over time accommodate divergent pupil response; rather it simply suggests that alternatives for teacher behavior take into account the current personal structure of the teacher. (cf. Fromm 1968, Strom 1969.)

With this in mind—each teacher's dignity and mental health—certain psychological-personality instruments were administered to know the participants better. As an aggregate the following 12 measures served as a basis for the prescription of instructional strategies consonant with the intentions and personality of the individual teachers (*see* Appendix A).

California Psychological Inventory
Edwards Personal Preference Schedule
Study of Values: The Dominant Interests in Personality
Rosenzweig Study for Assessing Reactions to Frustration
Gordon Personal Inventory
Guilford-Zimmerman Temperament Survey
Watson-Glaser Critical Thinking Appraisal
Torrance Verbal Tests of Creative Thinking
Torrance Figural Tests of Creative Thinking
FIRO B: Fundamental Interpersonal Relations Orientation
Myers-Briggs Type Indicator
Runner Studies of Attitude Patterns

To carry this logic one step further, it seemed reasonable to determine whether certain types of selfhood structures were more susceptible to training for inner city teaching than others. Are there certain persons who will not benefit sufficiently from preface experiences, because of

their personality, to allow them a chance for successful job performance? Or, are there persons whose selfhood structures facilitate benefiting from preface experiences and who subsequently perform well? Essentially, this is the focus of this publication.

Methods and Results

During the school year of the study the performance of each of the 21 participants in the Preface Plan was monitored and rated to produce four criterion measures. After scores on the dozen selfhood examinations and the criterion measures were accumulated, first order correlations were calculated between every variable and every other variable using the Pearson-Product-Moment Correlation Technique. By inspecting the correlations in the matrix thus produced, several of the psychological tests were removed from consideration because they appeared to have the least number of potentially predictive subtests and because of physical limitations in the number of subtests which could be handled by the next computer program to be used.[5] When the number of subtests had been reduced in this way, a stepwise regression analysis of each of the criterion measures was used to determine what parsimonious subset of psychological measures could predict each criterion with a reasonable amount of success.[6]

Predicting the Teacher Educator Overall Rating: The First Criterion. At the end of the program, each preface teacher was assigned an overall performance rating on a five-point scale by two independent judges. Using the overall ratings by the teacher educator as the criterion, the test selection routine was applied to select several psychological variables in the order of their contribution to the prediction of the criterion. Because of sample smallness and the lack of utility in adding large numbers of predictors, the described analysis includes only the first four predictors chosen for estimating the criterion. Table 1 indicates that considerable accuracy is achieved with these measures in predicting the overall rating.

Referring to Table 1, the first three variables in their order of selection are CPI-Achievement via Conformance, CPI-Femininity, and EPPS-Achievement. All these variables significantly relate to the criterion, although offering very low correlations with each other. By contrast, FIRO-B Expressed Control relates only slightly to the criterion but adds to the prediction through its role as a suppressor variable.

To properly understand the selected variables, their definitions require consideration. CPI-Achievement via Conformance is a California Psychological Inventory subtest to identify factors of interest and moti-

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vation which facilitate achievement in any setting where conformance is a positive behavior. To score high on this measure indicates that a person is capable, cooperative, efficient, organized, responsible, stable, and sincere. He is persistent and industrious and values intellectual activity and intellectual achievement. A low conformance rank defines a coarse, stubborn, aloof, awkward, insecure, and opinionated person, someone disorganized under stress of pressures to conform and pessimistic about his occupational future.

While CPI-Achievement via Conformance is predictive of the criterion, CPI-Achievement via Independence is not. The latter CPI submeasure identifies factors of interest and motivation which facilitate achievement in any setting where autonomy and independence are positive behaviors. High independence scores indicate a mature, forceful, strong, dominant, and foresighted person who is a self-reliant individual of superior intellectual ability and judgment. Low Achievement via Independence suggests inhibition, anxiety, and cautiousness—a dissatisfied, dull, and wary person whose lack of self-insight and self-understanding renders him submissive and compliant before authority. When the Teacher Educator Overall Rating serves as the criterion, having more or less CPI-Achievement via Independence does not seem to influence the assessment of inner city performance, but Achievement via Conformance contributes directly to recognition as an effective teacher.

The second psychological variable enabling prediction of the criter-

TABLE 1

Correlations Between Selected Psychological Variables and Teacher Educator Overall Rating of Inner City Teacher Performance

	Predictors				Criterion
	CPI Achievement via Conformance	CPI Femininity	EPPS Achievement	FIRO-B Expressed Control	Teacher Educator Overall Rating
Predictors:					
CPI Achievement via Conformance	1.00	–0.10	0.06	0.26	*0.69
CPI Femininity		1.00	0.33	–0.38	*0.46
EPPS Achievement			1.00	0.13	*0.47
FIRO-B Expressed Control				1.00	–0.16
Criterion:					
Teacher Educator Overall Rating					1.00

* Significant at or beyond the .05 level

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ion is CPI-Femininity, a submeasure developed to assign sex type to interest patterns. In this reference high femininity scores describe a person who is appreciative, patient, helpful, gentle, moderate, persevering, and sincere; someone respectful and accepting of others, a conscientious and sympathetic being. Low CPI-Femininity defines the masculine, outgoing, ambitious, active, robust, and restless; those blunt and direct individuals who are manipulative and opportunistic in dealing with others, and are impatient with delay, indecision, and reflection.

Our third predictor identified by the test selection routine is the Achievement scale from the Edwards Personal Preference Schedule. When defined by this scale, achievement means doing one's best, succeeding in tasks requiring skill and effort, exceeding others in ability to solve difficult problems, accomplishing something of significance, and recognition as an authority. This measure of achievement presents an extremely low correlation with CPI-Achievement via Conformance.

The correlation matrix of Table 1 reveals that FIRO-B Expressed Control, which measures a person's tendency to feel he controls people, was chosen because of its role as a suppressor variable. In contrast with the normal predictor, a suppressor variable presents a very low correlation with the criterion but offers a high correlation with at least one predictor. A suppressor variable does not contribute directly to prediction of the criterion but serves to improve predictive ability of the other measures by minimizing or eliminating their error.

When the four predictors just described are combined by multiple regression analysis for purposes of forecasting the first criterion—the Teacher Educator Overall Rating—a multiple correlation of .940 is obtained. Table 2 provides the multiple R, shrunken R, Beta (standard score) weights, b (raw score) weights, t for the weights, and an A weight for the regression analysis using the test selection routine. The multiple R is the correlation determined when all four variables are weighted and pooled as a basis for estimating the criterion; the shrunken R is a conservative estimate of multiple correlations corrected for statistical shrinkage. Beta weights (B's) are coefficients used to weight scores made on each of the variables in making predictions concerning the criterion when both the forecast measures and criterion are in standard z score form; the b weights are coefficients used in regression equations for relating each variable to the criterion when both the predictors and criterion are in raw score form. The A weight, or constant term, must also be included in the regression analysis if the raw score form is used. The t for the beta weights is an indication of the statistical significance of each predictor in the analysis.

In order to use the variables reported in Table 2 to make predictions about how teachers will perform on the criterion, a regression equation was developed:

$$\hat{z}_0 = \Sigma_{i=1}^{n} B_{0i} z_i$$

This equation may also be written

$$\hat{z}_0 = B_{01} z_1 + B_{02} z_2 + \ldots + B_{0n} z_n$$

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In the equation $\hat{z}_0$ represents the criterion in standard z score form; the B's are the Beta weights or coefficients for each of the measures as they are used in predicting the criterion; and the z's are the scores on the respective tests when in standard z form. From the general equation a special regression equation for four variables may be written

$$\hat{z}_0 = B_{01}z_1 + B_{02}z_2 + B_{03}z_3 + B_{04}z_4$$

Substituting the values from Table 2, there is obtained

$$\hat{z}_0 = .772z_1 + .307z_2 + .353z_3 + .293z_4$$

Given an individual's standard z score on four psychological scales, this method derives the regression equation for predicting his performance rating.[7]

Use of the equation involving these four highly relevant variables accounts for 88 per cent of the variance in the criterion. That is, the multiple correlation of .94, when squared, produces an estimate of 88 per cent shared variance.

Prediction of the overall rating is illustrated by the Figure 1 Venn Diagram. Each oval in Figure 1 represents the total amount of reliable variance on one of the psychological measures or the criterion. Overlap between the variance of one predictor and the variance of another is indicative of the shared variance or the correlation between two measures. For example, CPI-Achievement via Conformance overlaps with the performance rating producing a correlation of .69, while it shares variance only slightly with both EPPS-Achievement and the CPI-Femininity subtest. The measure CPI-Femininity shares variance, overlaps with the performance rating, and a correlation of .46 is obtained. EPPS-Achievement overlaps with the performance rating producing a correlation of .47. Clearly, each of these three variables

TABLE 2

Summary of Stepwise Multiple Regression Analysis for Selected Predictors of the Teacher Educator Overall Rating

Step	Variable	Beta or Standard Score Weight	b or Raw Score Weight	t for weights
1	CPI Achievement via Conformance	0.772	0.204	8.728
2	CPI Femininity	0.307	0.021	3.030
3	EPPS Achievement	0.353	0.112	3.724
4	FIRO-B Expressed Control	–0.293	–0.116	–2.963
Multiple Correlation .924		Shrunken Multiple Correlation .959		A Weight 13.380

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makes an independent contribution to the explanation of variance in performance rating.

Finally, the FIRO-B Expressed Control relates only slightly, that is it overlaps only slightly, with performance rating, correlates moderately and negatively with femininity, and moderately and positively with EPPS-Achievement. In this way a portion of error variance in the measure of CPI-Femininity and EPPS-Achievement can be effectively eliminated by adding the variable FIRO-B Expressed Control to the analysis. In other words, if subjects are selected who score high on CPI-Femininity but low on FIRO-B Expressed Control, predictions are improved. Similarly, prediction improves if subjects are selected who score high on both EPPS-Achievement and FIRO-B Expressed Control.

Predicting the Teacher Educator Composite Assessment: The Second Criterion. In addition to the overall performance level assigned each preface member, the teacher educator was obliged to submit a composite rating based on the Columbus system's end-of-the-year evaluation form (*see* Appendix B). Given the composite ratings as the criterion and the test selection technique, the following psychological variables were selected in their order of contribution to performance prediction: CPI-Achievement via Conformance, CPI-Femininity, Torrance Verbal

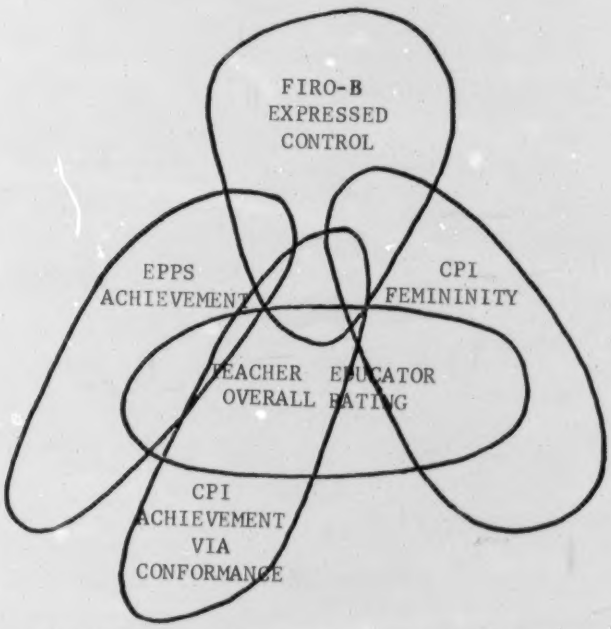

Figure 1. Venn Diagram of Components of Teacher Educator Overall Variance Accounted for by Selected Psychological Variables

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Fluence, and CPI-Good Impression (*see* Table 3). Since two of these measures were not predictive of the previous criterion—the Teacher Educator Overall Rating—their definitions deserve mention.

On the Torrance Tests of Creativity, high verbal fluence is defined as the ability to produce a large number of ideas with words. CPI-Good Impression is a California Psychological Inventory index devised to identify persons able to convey a favorable image and who manifest concern about how others react to them. High scores on this variable depict one who is cooperative, enterprising, outgoing, sociable, warm, and helpful; a diligent, persistent individual who cares about his social estimate in the view of others. By comparison, a low ranking suggests the subject is inhibited and harbors resentment and is a cautious, aloof, and self-centered person little concerned about the needs or desires of others.

As the four relevant predictors are combined in order to forecast the Teacher Educator Composite Rating of instructor performance, a multiple correlation of .967 results. By referring to the tabled (4) data, regression equations may be written that will enable prediction about inner city teacher performance. If the respective tests are in standard score form, the regression equation is written

$$\hat{z}_0 = .459z_1 + .389z_2 + .370z_3 + .316z_4$$

Should the teacher educator prefer to work in raw score terms, use

$$\hat{Y}_0 = 13.38 + 2.915Y_1 + .645Y_2 + .306Y_3 + 1.326Y_4$$

Reliance upon either equation associating these variables with the criterion makes it possible to account for 93.5 per cent of the variance

TABLE 3

Correlations Between Selected Psychological Variables and Teacher Educator Composite Rating of Inner City Teacher Performance

	Predictors				Criterion
	CPI Achievement via Conformance	CPI Femininity	Torrance Verbal Fluence	CPI Good Impression	Teacher Educator Composite Rating
Predictors:					
CPI Achievement via Conformance	1.000	–0.099	*0.562	*0.483	*0.781
CPI Femininity		1.000	–0.171	0.246	0.359
Torrance Verbal Fluence			1.000	0.125	*0.601
CPI Good Impression				1.000	*0.680
Criterion:					
Teacher Educator Composite					1.000

* Significant at or beyond the .05 level

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in the performance of inner city elementary staffs as judged by using a composite rating form. That is, squaring the multiple correlation of .967 provides a shared variance estimate of 93.5 per cent.

A Venn Diagram is presented as Figure 2 to augment the tabular and equation report. Each oval in Figure 2 represents the total amount of reliable variance on one of the psychological measures or the criterion. Overlap between measures is indicative of the correlation between them or the shared variance. For example, CPI-Achievement via Conformance overlaps with the performance rating (.78) and accounts for a substantial amount of variance in the criterion. Another measure contributing much to forecast of the performance rating is CPI-Femininity which correlates (.36) with the criterion while effectively retaining independence of the first predictor. Although Torrance-Verbal Fluence shares a sizable amount of variance with the Teacher Educator Composite Rating, much of it was already explained when CPI-Achievement via Conformance was selected as the first predictor. The .60 correlation between Torrance-Verbal Fluence and the criterion was not all new information owing to the additional relationship (.56) between Torrance-Verbal Fluence and CPI-Achievement via Conformance. As the last variable chosen, CPI-Good Impression offers a favorable relationship (.68) with the criterion, but its potential contribution is reduced because of correlation with two other predictors.

Inspection of Figure 2 suggests the conclusion that a large amount of the variance in the criterion can be accounted for by the selected predictors. Indeed, if persons are desired who have a high probability of receiving a high composite performance rating by the teacher

TABLE 4

Summary of Stepwise Multiple Regression Analysis for Selected Predictors of Teacher Educator Composite Rating of Teaching Effectiveness

Step	Variable	Beta or Standard Score Weight	b or Raw Score Weight	t for weights
1	CPI Achievement via Conformance	.459	2.915	5.119
2	CPI Femininity	.389	0.645	5.752
3	Torrance Verbal Fluence	.370	.306	4.728
4	CPI Good Impression	.316	1.326	4.068
Multiple Correlation .967		Shrunken Multiple Correlation .959		A Weight 13.380

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educator, they should score high on CPI-Achievement via Conformance, high on CPI-Femininity, high on Torrance-Verbal Fluence, and high on CPI-Good Impression.

Forecasting the Principal Overall Judgment: The Third Criterion. Upon conclusion of the preface year, each teacher participant was assigned an overall rating on the effectiveness of his performance by his principal. Assuming this rating as the criterion, several psychological variables for its prediction emerge from the test selection routine. In their respective order of forecast influence, the designated measures are CPI-Achievement via Conformance, EPPS-Exhibition, Torrance-Figural Elaboration, and EPPS-Deference (*see* Table 5). Among these variables, only one—CPI-Achievement via Conformance—also related highly to the criterion measures involving ratings by the teacher educator.

According to Edwards, EPPS-Exhibition is defined as "saying things just to see what effect it will have on others, to have others notice and comment upon one's appearance, to talk about personal achievement and be the center of attention, making witty and clever remarks, or using words that others do not know and posing questions they cannot answer." Teacher EPPS-Exhibition is negatively related to the Principal Overall Rating. To continue, the third predictor is Torrance-Figural Elaboration taken from the Torrance tests of creative thinking. This measure reflects a subject's ability to develop, embroider, embel-

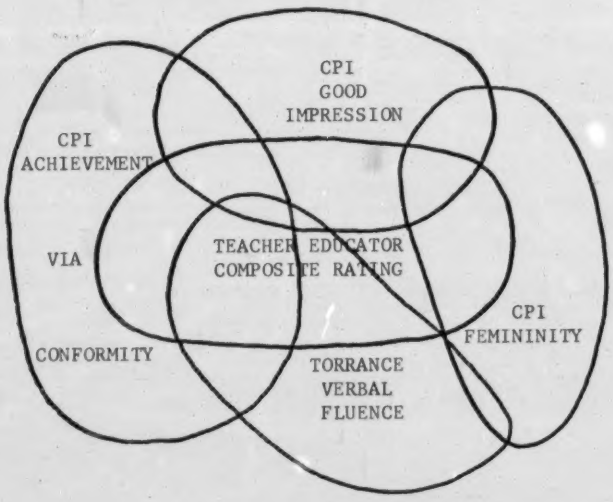

Figure 2. Venn Diagram of Components of Teacher Educator Composite Variance Accounted for by Selected Psychological Variables

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lish, carry-out, or otherwise elaborate ideas. Finally, the last predictor chosen is the EPPS-Deference scale indicating a person's need to get suggestions from others, to find out what they think, to praise others and tell them they have done a good job, to conform to custom and avoid the unconventional, to follow instructions and willingly accept the leadership of others.

A multiple correlation of .854 is determined when the four predictors of Table 6 are combined to forecast the Principal Overall Rating. By referring to the tabular data, regression equations may be written either for z score

$$\hat{z}_0 = .395z_1 - .180z_2 + .451z_3 + .393z_4$$

or if the raw score form be preferred, use

$$\hat{Y}_0 = -2.237 + .604Y_1 - .039Y_2 + .010Y_3 + .113Y_4$$

With these equations involving the relevant measures, 72.9 per cent of the variance in the criterion is accounted for. To express it differently, the multiple correlation of .854, when squared, produces an estimate of shared variance of 72.9 per cent.

Another way to view the results is suggested by Figure 3. Here each of the ovals represents the total amount of variance on each measure or the criterion. The variance overlap between one test and that of another is indicative of their correlation. For instance, CPI-Achievement

TABLE 5

Correlations Between Selected Psychological Variables and Principal Overall Rating of Inner City Teaching Effectiveness

	Predictors				Criterion
	CPI Achievement via Conformance	EPPS Exhibition	Torrance Figural Elaboration	EPPS Deference	Principal Overall Rating
Predictors:					
CPI Achievement via Conformance	1.000	–0.019	0.259	0.231	*0.606
EPPS Exhibition		1.000	–0.067	*–0.504	*–0.416
Torrance Figural Elaboration			1.000	–0.185	*0.493
EPPS Deference				1.000	*0.492
Criterion:					
Principal Overall Rating					1.000

* Significant at or beyond the .05 level

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via Conformance overlaps (.606) with the principal's performance rating. By contrast, EPPS-Exhibition correlates negatively (—.416) with the administrator judgment, thereby adding considerably to the portion of variance in the criterion accounted for because EPPS-Exhibition is virtually unrelated to CPI-Achievement via Conformance. Although Torrance-Figural Elaboration substantially relates to and shares considerable variance with the criterion, the full impact of this Torrance submeasure is not added, since a large portion of its variance is common with that already entered by the first predictor. In addition, while EPPS-Deference accounts for some of the previously unexplained variance in the administrator rating of the new inner city teacher, this variable's effect is also lessened by its amount of variance shared with the remaining predictors.

Forecasting the Administrator Composite Evaluation. Retaining the same procedure to establish prediction of the criterion, the Principal Composite Rating was considered as an index of teacher success. In this case, the Table 7 correlation matrix identifies predictors in their order of influence: EPPS-Exhibition, CPI-Sense of Well-Being, Torrance-Verbal Flexibility, and G-Z Friendliness (from the Guilford-Zimmerman Temperament Survey). Whereas EPPS-Exhibition was useful in forecasting the administrator overall rating, each among the remaining variables of Table 7 emerge for the first time in this analysis.

The CPI-Sense of Well-Being scale purports to identify subjects who minimize both worries and complaints, people relatively free from self-doubt and disillusionment. High scores on this scale describe an

TABLE 6

Summary of Stepwise Multiple Regression Analysis for Selected Predictors of Principal Overall Rating of Teaching Effectiveness

Step	Variable	Beta or Standard Score Weight	b or Raw Score Weight	t for weights
1	CPI Achievement via Conformance	0.395	0.104	2.755
2	EPPS Exhibition	–0.180	–0.039	–1.154
3	Torrance Figural Elaboration	0.451	0.010	3.146
4	Deference	0.393	0.113	2.371
Multiple Correlation .854		Shrunken Multiple Correlation .814		A Weight –2.237

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energetic, alert, ambitious, and versatile person who values work and effort for its own sake. Low well-being scores reflect the self-defensive and apologetic individual, someone restricted to the conventional in thought and action, a cautious, awkward, and apathetic type. By Torrance-Verbal Flexibility is meant the ability to produce a variety in kinds of ideas, to shift from one approach to another in the service of multiple strategies. On the last variable, G-Z Friendliness scale, a high score can mean either a lack of aggressive tendencies to the point of pacifism, or it can mean a healthy, realistic handling of frustration and injury. Unlike the high scores which indicate an urge to be liked and to please others, a low friendliness index suggests that its person harbors hostility in some form or another.

When the four psychological measures are combined by multiple regression analysis for the purpose of forecasting the administrator composite rating, a multiple correlation of .828 is obtained. From the Table 8 data, it is possible to write regression equations either in standard score form

$$\hat{z}_0 = -.456z_1 + .458z_2 - .412z_3 + .287z_4$$

or, computed in raw score terms

$$\hat{Y} = 128.584 - 1.404Y_1 + 2.115Y_2 - .465Y_3 + .709Y_4$$

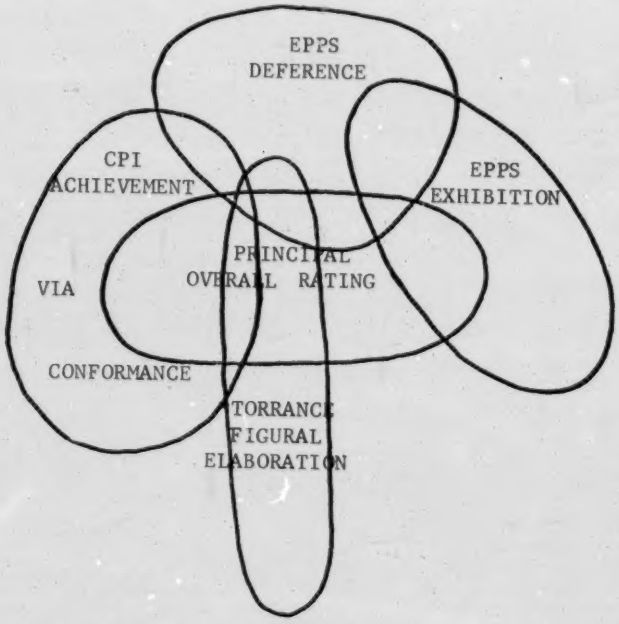

Figure 3. Venn Diagram of Components of Principal Overall Rating Variance Accounted for by Selected Psychological Variables

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If the specified variables be included in either recommended equation, the accountability for variance in the criterion reaches 67.5 per cent. Expressed differently, squaring the multiple correlation of .828 provides a shared variance estimate of 67.5 per cent.

TABLE 7

Correlation Between Selected Psychological Variables and Principal Composite Rating of Inner City Teaching Effectiveness

	Predictors				Criterion
	EPPS Exhibition	CPI Sense of Well-Being	Torrance Verbal Flexibility	G-Z Friend-liness	Principal Composite Rating
Predictors:					
EPPS Exhibition	1.000	.052	.080	–.264	*–.541
CPI Sense of Well-Being		1.000	.291	.291	.395
Torrance Verbal Flexibility			1.000	.122	–.280
G-Z Friendliness				1.000	*.490
Criterion:					
Principal Composite Rating					1.000

* Significant at or beyond the .05 level

TABLE 8

Summary of Stepwise Multiple Regression Analysis for Selected Predictors of Principal Composite Rating of Teaching Effectiveness

Step	Variable	Beta or Standard Score Weight	b or Raw Score Weight	t for weight
1	EPPS Exhibition	–0.456	–1.404	–3.099
2	CPI Sense of Well-Being	0.458	2.115	2.993
3	Torrance Verbal Flexibility	–0.412	–0.465	–2.802
4	G-Z Friendliness	0.287	0.709	1.874

Multiple Correlation	Shrunken Multiple Correlation	A Weight
.828	.779	128.584

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Study of Figure 4 reveals the amount of variance shared among the predictors and the principal judgment. It is apparent that, because of its substantial overlap with the composite rating, EPPS-Exhibition accounts for the largest portion of variance in the criterion. Virtually independent of EPPS-Exhibition, the CPI-Sense of Well-Being measure also accounts for an element of criterion variance. The Torrance-Verbal Flexibility accounts for some variance but less than might be the case if its contribution were independent of the influences already entered by another predictor. Although the G-Z Friendliness scale is substantially associated with the composite rating, its contribution to prediction is diminished because of a relatedness to other forecasters.

The Relationship Among Criterion Measures. A fairly great convergence existed among the different criterion measures employed to judge teacher effectiveness despite reasonable expectations to the contrary (*see* Table 9 and Figure 5). For example, principals and the teacher educator might be expected to differ a great deal in their expectations for classroom staff, with principals reflecting more concern about 'maintaining a tight ship' and the researcher focusing upon the humane and individual instruction of pupils. In this study, there was a fairly high amount of agreement between the judgments made by these two professionals. As expected, there is a high correlation between the

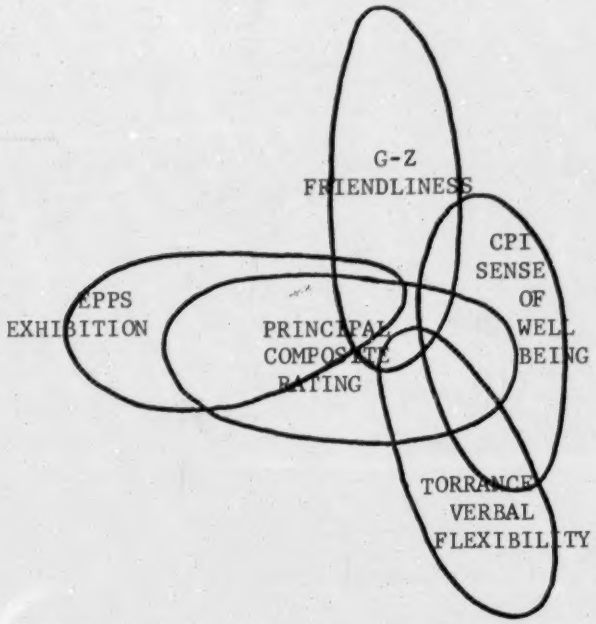

Figure 4. Venn Diagram of Components of Principal Composite Rating Variance Accounted for by Selected Psychological Variables

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teacher educator's two different types of judgments (.93) and a similar agreement for the principals (.61). There is also agreement between the different professionals using the same evaluative technique to judge the same people for the composite rating (.45) and for the overall rating (.65). Finally, one would expect a relationship to exist even when neither rater nor evaluation method were common—Teacher Educator Composite Rating to Principal Overall Rating (.75), and Teacher Educator Overall Rating to Principal Composite Rating (.36).

TABLE 9

Correlation Coefficients Between Various Criterion Measures

	Teacher Educator Overall Rating	Teacher Educator Composite Rating	Principal Overall Rating	Principal Composite Rating
Teacher Educator Overall Rating	1.000	* .934	* .650	* .445
Teacher Educator Composite Rating		1.000	* .569	.364
Principal Overall Rating			1.000	* .613
Principal Composite Rating				1.000

* Significant at or beyond the .05 level

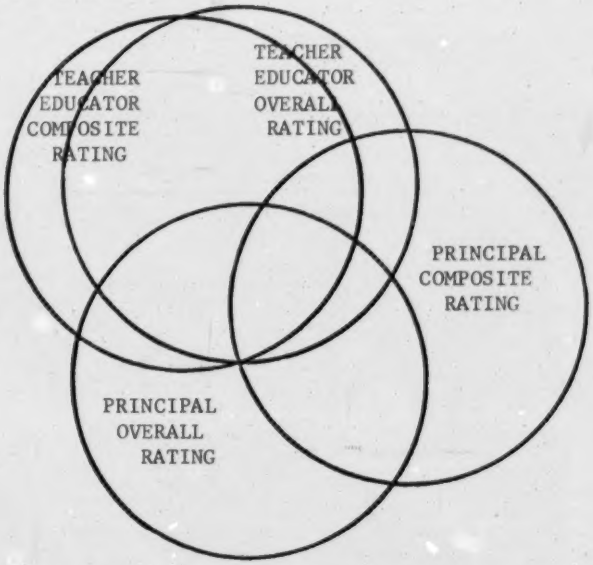

Figure 5. Venn Diagram of Components of Shared Variance Among Four Criterion Measures of Teaching Effectiveness

In terms of psychological factors affecting convergence, achievement via conformity seems to be a theoretical construct linking the teacher educator ratings to the principal assessment.[8] Their independent evaluations favoring fluence (verbal and figural) also unite the judges.[9] As for internal consistency, the teacher educator and schoolman respectively appear influenced by the variables of femininity and exhibition—good impression. The divergence of the Principal Composite Rating from all other indices could be attributed to the variable, "sense of well-being." However, these hypothetical fabrics represent conjecture about agreement among the various criterion measures; conclusive evidence requires further inquiry.

A Look Ahead

If someone were to follow exactly the procedures employed in this research, chances are very good that his ability to identify potential teachers for the inner city would be improved. By using the test selection methodology, the research identified a subset of psychological measures which yielded a highly accurate prediction for each of the criterion measures in the study; the manageable set of tests which were identified provided requisite information to improve the chances of good performance on the part of each teacher.

However, it should be pointed out that the methodology could be improved by employing factor-analytic techniques. If the battery of prediction measures and the battery of criterion measures each were to be factor analyzed into a parsimonious subset of factors, it would then be possible to think in terms of a relatively small number of quite generalizable, independent prediction measures more or less related to a like set of independent criterion measures. This would add both to the theoretical and to the practical usefulness of such an analysis. But such treatment of the data requires larger sample sizes than the more simplistic stepwise regression analysis already discussed.[10]

This raises a final but most important point—by the methodology described here, the researcher is free to choose any battery of prediction or criterion measures he would want to employ. In addition to psychological measures, it is possible to use such indices as ratings of simulation performance, results from interviews, recommendations from relevant sources, or any other variables holding some potential for correlating with the ultimate performance to be predicted. In addition, any criterion measure or battery might be chosen such as ratings of teachers on a standard form, overall performance estimates by an observer-judge, or—hopefully—even the candidate's self-intentions. These criterion measures can either be considered independently, with each receiving its own analysis, or they may be combined and analyzed simultaneously.[11]

There is reason to hope that as acceptance of the forecast prospect accrues, it will be accompanied by a modification in criteria systems. We now know that what constitutes being a 'good' teacher has been an elusive search in large measure because a single set of criteria has been

sought. Historically, the rating technique has permitted and encouraged persons other than the teacher himself to define the optimal conditions for learning in his classroom. By overlooking the teacher's intentions as a relevant criterion base, it has been possible, though unfortunate, to speak of classroom effectiveness as something quite apart from the goals of its teacher, perhaps independent of his motivation, and certainly disconnected from any self-definition of success.[12] And, yet, the authors' experience with inner city teachers suggests that many of them leave the classroom or profession, not because they have been fired or criticized by supervisors and principals, but precisely because by their own criteria they have failed. To fail in one's own estimate, however unrealistic the expectation may be, can influence behavior and self-esteem much more than can the assessment of colleagues. Since teacher disaffection represents such an influence in the request for transfer or the decision to quit, it appears vital that more teachers be able to feel successful in terms of self-defined criteria, buttressed as much by evidence as by hope. Credibility is a more powerful force than those who chant "encouragement" may know.[13]

One useful alternative to the familiar single set of system-wide criteria is the intention pool recommended by our Better Teacher Project (Strom and Galloway, 1967). In the past, a recurring mistake has been for help agents to suggest behaviors for intentions that teachers may not embrace. Because such conditions foster intrusion they introduce a decline in the viability of supervisory assistance. These limitations are partly overcome when a teacher identifies from a pool of intentions those which in a specified period he wishes to actualize. The process of actualizing an intention can be defined in the following way:

A *belief* is expressed in the worth of a teaching intent.

A *condition* is identified under which the intent can occur.

A *commitment* is made to test the feasibility of the condition.

Assume a teacher says, "I wish to enable more pupil creative behavior." When purposes are stated in this global manner, the help agent is more likely to direct his observation toward behaviors that are irrelevant in the estimate of the teacher. By contrast, a teacher selecting from among the intention pool might elect this one:

"Pupils who are encouraged to make conjectures are more likely to become producers of ideas. To support the greater occurrence of pupil thought in my classroom, I will encourage the expression of hypotheses through statements and questions of a speculative nature."

At the end of a specified period, e.g. one class hour, the observer might report to the teacher that students offered twenty statements of a speculative nature. In turn, the teacher ignored or acknowledged these statements fifteen times and offered reward or encouragement in only five instances. This kind of feedback would indicate a large gap between a teacher's intention and his behavior.

Or, consider the teacher who reports his goal to "assist students in learning to respect ideas for their merit rather than their spokesman."

In its present form, this goal is too broad; when fractionized it includes intentions such as:

"Since the peer group represents an important source of evaluation to youngsters in the nonacademic pursuits, it seems likely that fellow-sanction and disapproval obtains for scholastic concerns as well. When peer approval exists for an idea that is known by the teacher to be erroneous, conflict may arise. When pupils infer that age or status of the teacher's birth is affecting his opinion, the conflict can best be overcome by testing the idea. In order to emphasize the determination of the worth of an idea more than its source or the amount of its support, I should like to encourage greater recourse to ideational testing." Here again, the observer can record the extent to which a teacher's intentions are actualized and suggest ways to eventuate the unmet goals.

Basing our strategy is the proposition that perhaps we need to look at learning more as something in which the learner achieves purposes he at least recognizes and—hopefully—intentions he establishes. Otherwise, what one is being taught as a student or counseled to do as a teacher naturally seems irrelevant. By relying in future research on teacher intentions as one criteria system of success, we allow self-direction, eliminate the intruder concept, and enhance teacher dignity. Moreover, regardless of whether the feedback on actualizing be negative or positive, it is by definition at least relevant.

APPENDIX A

California Psychological Inventory.

Unlike many of the standard assessments designed for use with problems of deviant behavior, the CPI deals with personality features having a wide pervasive applicability to human behavior. They are related to the healthy aspects of personal functioning rather than to the morbid and pathological. Intended primarily for use with "normal" (nonpsychiatrically disturbed) subjects, the CPI has since 1951 been administered to more than 750,000 persons of all age groups between 12 and 70. Each of its 18 scales is intended to cover one important facet of interpersonal psychology, with the total set providing a comprehensive survey of a person from this social interaction reference.

To emphasize some of the psychological and psychometric clusterings that exist among the various scale purposes, author Harrison Gough (1964) has grouped them into four broad class categories:

I. Class I. Measures of Poise, Ascendancy, and Self-Assurance
   1. Dominance: To assess factors of leadership ability, dominance, persistence, and social initiative.
   2. Capacity for Status: To measure the personal qualities and attributes which underlie and lead to status. Serves as an index of an individual's capacity for status (not his actual or achieved status).
   3. Sociability: To identify persons of outgoing, social, participative temperament.
   4. Social Presence: To assess factors such as poise, spontaneity, and self-confidence in personal and social interaction.
   5. Self-Acceptance: To assess factors such as sense of personal worth, self-acceptance, and capacity for independent thinking and action.
   6. Sense of Well-being: To identify persons who minimize their worries and complaints, and who are relatively free from self-doubt and disillusionment.

II. Class II. Measures of Socialization, Maturity, and Responsibility
   7. Responsibility: To identify persons of conscientious, responsible, and dependable disposition and temperament.
   8. Socialization: To indicate the degree of social maturity, integrity and rectitude which the individual has attained.
   9. Self-Control: To assess the degree and adequacy of self-regulation and self-control, freedom from impulsivity, and self-centeredness.
   10. Tolerance: To identify persons with permissive, accepting, and nonjudgmental social beliefs and attitudes.
   11. Good Impression: To identify persons capable of creating a favorable impression, and who are concerned about how others react to them.
   12. Communality: To indicate the degree to which an individual's reactions and responses correspond to the modal ("common") pattern established for the inventory.

III. Class III. Measures of Achievement Potential and Intellectual Efficiency

13. Achievement via Conformance: To identify those factors of interest and motivation which facilitate achievement in any setting where conformance is a positive behavior.
14. Achievement via Independance: To identify those factors of interest and motivation which facilitate achievement in any setting where autonomy and independence are positive behaviors.
15. Intellectual Efficiency: To indicate the degree of personal and intellectual efficiency which the individual has attained.

IV. Class IV. Measures of Intellectual and Interest Modes

16. Psychological-mindedness: To measure the degree to which the individual is interested in, and responsive to, the inner needs, motives, and experiences of others.
17. Flexibility: To indicate the degree of flexibility and adaptability of a person's thinking and social behavior.
18. Femininity: To assess the masculinity or femininity of interests.

Edwards Personal Preference Schedule.

Personality inventories are generally made up of statements relating to traits so that a "yes" response indicates that the subject believes the statement is characteristic of himself and a "no" response that it is not. The influence of social desirability in responses has been minimized on the EPPS. Assume that two statements offered represent different personality traits and that each is equal with respect to social desirability scale values. Under these conditions, selecting from a pair of statements the statement more characteristic of oneself renders the factor of social desirability less an influent than in a yes-no item choice.

Alan Edwards' EPPS (1959) departs from most personality inventories which purport to indicate an individual's degree of adjustment, anxiety, emotional stability or, in some instruments, the clinical syndromes of maladaptive response—hysteria, paranoia, or schizophrenia. Such inventories present definite problems in counseling citations where it often is desirable to report scores back to the testee. These connotations are less likely to be attached to the fifteen normal, yet relatively independent, manifest need variables measured by the EPPS.

1. Achievement: To do one's best, to be successful, to accomplish something of great significance, to be a recognized authority.
2. Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected.
3. Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized.
4. Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance.
5. Autonomy: To say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional.
6. Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships.
7. Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place.

8. Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems.
9. Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader.
10. Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right.
11. Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others.
12. Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things.
13. Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved.
14. Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to be regarded as physically attractive by those of the opposite sex.
15. Aggression: To attack contrary points of view, to criticize others publicly, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong.

Study of Values: A Scale for Measuring the Dominant Interests in Personality.

In his book *Types of Men*, Edward Spranger defends the view that the personalities of men are best known through the study of their values or evaluative attitudes. Using Spranger's classification, Allport, Vernon, and Lindzey (1960) have devised a study of values primarily for use with college students or with adults of equivalent education. The *Study of Values*, originally published in 1931 and revised in 1960, measures the relative prominance of six basic interests or motives in personality: the theoretical, economic, aesthetic, social, political, and religious. Respectively:

(1) The Theoretical: The dominant interest of the theoretical man is the discovery of truth.
(2) The Economic: The economic man is characteristically interested in what is useful.
(3) The Aesthetic: The aesthetic man sees his highest value in form and harmony.
(4) The Social: The highest value for this type is love of people. In the *Study of Values*, it is the altruistic or philanthropic aspect of love that is measured.
(5) The Political: The political man is interested primarily in power.

(6) The Religious: The highest value of the religious man may be called unity.

The Rosenzweig (1947) Picture-Association Study for Assessing Reactions to Frustration.

The picture-frustration study, (briefly referred to as the PF instrument) represents a limited projected procedure for disclosing patterns of response to everyday stress widely recognized to be important in both normal and abnormal adjustment. Each of the 24 cartoon-like pictures comprising the test depict two people involved in a mildly frustrating situation common to most of us. At the left of every picture a figure is shown saying certain words that help to describe the other person's frustration or that prove frustrating to him. A blank caption appears above the frustrated person on the right. All expressions of personality and facial features are purposely omitted from the pictures. The situations included are comprised of two types: ego blocking and superego blocking. Ego blocking issues are those in which an obstacle, personal or impersonal, interrupts, disappoints, deprives, or otherwise frustrates the subject. Superego blocking represents some accusation, charge, or incrimination of the subject by someone else.

The person taking the test is instructed to successively inspect each situation and fill in the blank captions with the first appropriate reply entering his mind. It is assumed that the person taking the PF test will unconsciously or consciously identify himself with the frustrated individual in each pictured situation and in the replies given project his own bias. To assess this, bias scores are assigned to each response regarding the direction of aggression and type of reaction. Subsumed under direction of aggression are: (1) extra-punitiveness—when aggression is turned upon the environment; (2) intropunitiveness—when aggression is turned by the subject upon himself; (3) impunitiveness—in which an evasion of aggression is made to gloss over the frustration. Subsumed under reaction types are: obstacle dominance in which the barriers occasioning the frustrations stand out in the responses; ego defense in which the subject's ego predominates; and need persistence in which resolution of the frustrating situation is emphasized.

Gordon (1963) Personal Inventory.

Developed from a factor analysis approach, the GPI may be used with students of high school and beyond. The four personality traits which it measures are important ones in determining the adjustment of normal individuals in numerous educational and social situations: cautiousness, original thinking, personal relations, and vigor. High and low scores on each of the scales are interpreted as follows.

Cautiousness: Individuals who are highly cautious, who consider matters very carefully before making decisions, and do not like to take chances or run risks, score high on this scale. Those who are impulsive, act on the spur of the moment, make hurried or snap decisions, enjoy taking chances, and seek excitement, score low on this scale.

Original Thinking: High scoring individuals like to work on difficult problems, are intellectually curious, enjoy thought-provoking questions and discussions, and like to think about new ideas. Low scoring

individuals dislike working on difficult or complicated problems, do not care about acquiring knowledge, and are not interested in thought-provoking questions or discussion.

Personal Relations: High scores are made by those individuals who have great faith and trust in people, and are tolerant, patient, and understanding. Low scores reflect a lack of trust or confidence in people, and a tendency to be critical of others and to become annoyed or irritated by what others do.

Vigor: High scores on this scale characterize individuals who are vigorous and energetic, who like to work and move rapidly, and who are able to accomplish more than the average person. Low scores are associated with low vitality or energy level, a preference for setting a slow pace, and a tendency to tire easily and be below average in terms of sheer output or productivity.

The Guilford-Zimmerman (1949) Temperament Survey.

One of the most often employed instruments to obtain a comprehensive picture of individual personality is the Guilford-Zimmerman Temperament Survey. Comprised of 300 items, the survey yields a score index for each of 10 traits that have been identified by factor-analysis procedures. The utility of the traits concept has been amply demonstrated in their clinical applications and in vocational counseling and placement.

The ten traits are:

General Activity	Objectivity
Restraint	Friendliness
Ascendance	Thoughtfulness
Sociability	Personal Relations
Emotional Stability	Masculinity

Watson-Glazer (1952) Critical Thinking Appraisal.

Some of the important abilities involved in critical thinking are measured by the Watson-Glaser instrument which purports to serve both as a test of such factors and as a tool for their development. Most of the content resembles arguments, problems, and statements that each of us daily encounter in our reading, televiewing or discussion with other people. Each of the 99 items making up five subtests calls for critical thinking about one of two subject matter types. Some items deal with problems of a neutral nature, for example, the weather about which people generally do not have strong feelings. Though parallel in structure, other items relate to economic, social, or racial issues that people generally have strong feelings about and indicate their bias or prejudice. The emotional impact of each item will vary from person to person, but the inclusion of areas of common prejudice or controversy is necessary to provide a partial sample of an individual's thinking about concerns in which he has personal involvement. Any subject's total critical thinking score will probably be reduced by any lack of objectivity. The five subjects are:

Test 1: Inference. Designed to sample ability to discriminate among degrees of truth or falsity or probability of certain inferences drawn from given facts or data.

Test 2: Recognition of Assumptions. Designed to sample ability to recognize unstated assumptions in given assertions or propositions.

Test 3: Deduction. Designed to sample ability to reason deductively from given premises; to recognize the relation of implication between propositions; and to determine whether what seems an implication or necessary inference between one proposition and another is indeed such.

Test 4: Interpretation. Designed to sample ability to weigh evidence and to distinguish between unwarranted generalizations and probable inferences which, though not conclusive or necessary, are warranted beyond a reasonable doubt.

Test 5: Evaluation of Arguments. Designed to sample ability to distinguish between arguments which are strong and important to the question at issue and those which are weak and unimportant or irrelevant.

Torrance (1966) Test of Creative Thinking.

In both his verbal and figural tests, Torrance has devised activities that make use of what is known about the nature of the creative thinking process, the qualities of creative products, and creative personalities. An attempt is made however to assess the results of these two tests in terms of Guilford's divergent thinking factors: fluency, flexibility, originality, and elaboration.

For example, one straightforward model of important elements for creative thinking is the ask and guess subtest, included in the verbal battery to allow subjects a chance to express their curiosity, show an ability to develop hypotheses, and think in terms of possibles. The number of relevant responses gives a measure of ideational fluency, while the number of shifts in thinking or categories of questions, causes, or consequences yields an index of flexibility. The statistical infrequency of these questions, causes, or consequences or the extent to which the response represents a mental leap or departure from the obvious and commonplace gives the measure of originality. The detail of specificity incorporated into the questions and hypotheses are measures of an ability to elaborate. Additional verbal tasks entail product improvement, unusual uses, unusual questions, and responses to improbable situations.

The figural tasks may require one to think of a picture in which the provided shape is an integral part. An effort is made to elicit an original response by asking subjects to think of something that no one else in the group will produce. Elaboration is encouraged by the instructions to add ideas that will make the picture tell as complete a story as possible. Thus the product is evaluated for originality and elaboration. Other figural subtests involve incomplete figures and parallel lines which should elicit the creative tendency to bring structure and completeness to whatever is incomplete while the circles and closed figures require the ability to disrupt or destroy an already closed form.

FIRO B.

FIRO stands for "Fundamental Interpersonal Relations Orientation." It signifies the basic idea that every person orients himself in

characteristic ways toward other people, and the basic belief that knowledge of these orientations allows for considerable understanding of individual behavior and the interaction of people. The postulate of author William Shutz (1966) is that every individual has three interpersonal (or group) needs: inclusion, control, and affection.

The interpersonal need for inclusion is defined behaviorally as the need to establish and maintain a satisfactory relationship with people with respect to interaction and association. On the level of feelings the need for inclusion is defined as the need to establish and maintain a feeling of mutual interest with other people. This feeling includes: (1) being able to take an interest in other people to a satisfactory degree; and (2) having other people interested in the self to a satisfactory degree. With regard to the self-concept, the need for inclusion is the need to feel that the self is significant and worthwhile.

The interpersonal need for control is defined behaviorally as the need to establish and maintain a satisfactory relationship with people with respect to control and power. With regard to feelings, the need for control is defined as the need to establish and maintain a feeling of mutual respect for the competencies and responsibilities of others. This feeling includes (1) being able to respect others to a satisfactory degree: and (2) having others respect self to a satisfactory degree. The need for control, defined at the level of perceiving the self, is the need to feel that one is a competent, responsible person.

The interpersonal need for affection is defined behaviorally as the need to establish and maintain a satisfactory relationship with others with respect to love and affection. At the feeling level, the need for affection is defined as the need to establish and maintain a feeling of mutual affection with others. This feeling includes (1) being able to love other people to a satisfactory degree; and (2) having others love the self to a satisfactory degree. The need for affection, defined at the level of self-concept, is the need to feel the self is lovable.

According to Shutz, this type of formulation stresses the interpersonal nature of these needs. They require that the organism establish a kind of equilibrium, in three different areas, between the self and other people. In order to be anxiety-free, a person must find a comfortable behavioral relation with others with regard to the exchange of interaction, power, and love. The need is not wholly satisfied by having others respond toward the self in a particular fashion. A satisfactory balance must be established and maintained. The six indices of the FIRO-B are:

Wanted Inclusion	Wanted Affection	Wanted Control
Expressed Inclusion	Expressed Affection	Expressed Control

The Myers-Briggs (1963) Type Indicator.

The purpose of this indicator is to implement the theory of type expressed by Carl G. Jung, the Neo-Freudian. It was Jung's assumption that much apparently random variation in human behavior is actually quite orderly and consistent because of certain basic differences in the way people prefer to use perception and judgment. By perception is meant those processes of becoming aware of things, people, occurrences, or ideas. By judgment is meant the processes of reaching

conclusions about what has been perceived. If people differ systematically in what they perceive and the conclusions they come to, they may as a result show corresponding differences in their reactions, interests, values, needs, and motivations, in what they do best, and in what they like to do best. With this as a working hypothesis, the Myers-Briggs Type Indicator purposes to ascertain the effects and combinations of preferences by having individuals report on their perceptions and judgments.

The indicator contains separate indices for determining each of four basic preferences which under this theory structure the individual personality.

Preference as Between	*Affects Individual's Choice as to*
Extraversion or Introversion	Whether to direct perception and judgment upon environment or the world of ideas
Sensing or Intuition	Which of these two kinds of perception to rely on
Thinking or Feeling	Which of these two kinds of judgment to rely on
Judgment or Perception	Whether to use judging or perceptive attitude for dealing with environment

Runner (1965) Studies of Attitude Patterns.

The Runner Instrument is designed for people whose daily work requires them at least to recognize, and hopefully to develop resources in other people. It pertains to desires for excitement and personal growth on the one hand versus desires for comfort and personal security on the other. Almost all of the 118 items are derivations or elaborations of this basic conceptual dichotomy of desire for new experience and growth as opposed to desire for comfort and security. It is convenient to think of the 12 scales as related to four discrete types of personal orientation:

1. *Control Oriented*, including
   Emphasis on Rules and Tradition
   Practical Planfulness
   Hostility
   Passive Compliance
2. *Freedom Oriented*, including
   Experimental Orientation
   Inituitive Orientation
   Resistance to Social Pressure
   Pleasure in Tool Implemented Handskills
3. *Recognition Oriented*, including
   Extroversiveness
   Desire for Power and Authority
4. *Anxiety Oriented*, including
   Performance Anxiety
   Social Anxiety

APPENDIX B

Columbus Public Schools

An Evaluation of Professional Growth and Teaching Service

A. *Purpose of the evaluation*

Columbus is vitally interested in the quality of instruction in its schools. To maintain and improve this quality, a committee of teachers and administrators has developed this instrument to evaluate teaching services. This instrument has been designed for the teacher to make frequent self-evaluation of his own strengths and weaknesses. It is also intended to be used as the basis for a conference between the principal and teacher. This technique should result in an improvement of instruction and inservice training.

B. *Conditions for evaluation*

1. The teacher shall make a self-evaluation.
2. The principal shall make an evaluation in all areas in which he feels qualified.
3. When these two evaluations have been made, the principal and teacher shall meet together for the purpose of studying the evaluations.
4. As an alternative to the three steps listed immediately above, the teacher may complete the evaluation form first and have the principal make his evaluations on the same sheet.
5. New teachers shall be evaluated each year until tenure is granted.
6. Teachers new to the building shall be evaluated their first year in the building.
7. Teachers may request an evaluation at any time.
8. Teachers who in the opinion of the administration need special help or merit special recognition shall be evaluated.
9. Directors and supervising principals shall not participate in the evaluation.
10. The instrument is designed for self-evaluation and cooperative evaluation between principal and teacher not teacher and teacher.

C. *Disposal of the blank after evaluation*

1. Evaluations of nontenure teachers should be sent to the assistant superintendent, personnel.
2. Since the primary purpose of the instrument is self-improvement, the principal's evaluation of tenure teachers shall be destroyed in the presence of the teacher at the close of the conference. The teacher may dispose of his personal copy at his own discretion.
3. Tenure teachers may request that the evaluation be filed in their folders at the Administration Building for future reference.

D. *Difference of opinion*

Provision should be made for the transfer of teachers who feel that the evaluation was not fair and resulted from personality differences.

Teacher_____ Date_____ Grade or Subject_____ School_____

The dual code employed in this evaluation was deliberately adopted in order to give the teacher more ease in evaluating himself. The teacher's code is subjective while the principal's is objective. Checking

in this fashion should not cause concern regarding the difference between the checks, nor the interpretation others may place upon them.

Code for self-evaluation:	Code for principal's evaluation:
+ = one of my stronger characteristics	O Outstanding
	S Successful
N = neither one of my strongest, nor one of my weakest characteristics	G Shows growth
	H Needs help
	U Unsatisfactory
— = one of my weaker characteristics	

The Columbus Form

Personal Qualities

__ __Shows a genuine enthusiasm for the job.
__ __Understands and likes children.
__ __Possesses a genuine desire to be a successful teacher.
__ __Is well poised; displays mental and emotional stability.
__ __Has a happy mental attitude and a sense of humor.
__ __Is reasonable, fair, and impartial in dealings with pupils.
__ __Is dependable; follows through on an assignment until it is finished.
__ __Uses effective oral expression in a well modulated voice.
__ __Dresses appropriately; is neat and well groomed; has good posture.
__ __Respects human relationships; is free from bias and prejudice.
__ __Displays self-confidence tempered with humility.
__ __Shows judgment and tact.
__ __Has physical strength to meet demands.

Professional Qualities

__ __Is a firm believer in our American way of life and promotes an understanding of our heritage and our freedoms.
__ __Possesses an understanding of and faith in our American system of public education.
__ __Maintains a cooperative and harmonious relationship with coworkers.
+ __Does a continuous job of self-evaluation and tries to strengthen obvious weaknesses.
__ __Adheres to the accepted ethical standards of the profession.
__ __Participates adequately in activities designed to meet the needs of this particular school.
__ __Accepts responsibility willingly both inside and outside the classroom.
__ __Assumes his just share of community financial responsibilities.
__ __Has a cooperative approach toward parents.
__ __Possesses a loyalty to the school system, the local administration, and the school program in community relationship.
__ __Complies with rules and administrative requests.
__ __Accepts willingly a change in assignment when organization demands.
__ __Understands his program in relation to the program of the entire school.
__ __Accepts constructive criticism and suggestions graciously.
__ __Is accurate and punctual in completing school records and reports.
__ __Cooperates in parent-teacher-association activities.

Teaching Performance

___ ___Maintains a warm and friendly atmosphere which promotes pupil confidence without loss of dignity.
___ ___Disciplines in a quiet, dignified, fair, and positive manner while helping each pupil achieve self-control; maintains a balance between individual freedom and responsible behavior.
___ ___Believes in the importance of the individual and provides for individual differences.
___ ___Encourages and guides pupils toward appropriate goals and helps them in evaluating their achievements.
___ ___Uses a variety of instructional methods to create interest, maintain attention, and encourage self-direction.
___ ___To motivate pupils, assigns an adequate amount of meaningful homework and provides for adequate pupil participation in class activities.
___ ___Shows skill in organizing classroom activities.
___ ___Avoids the use of sarcasm in dealing with pupils.
___ ___Possesses a thorough understanding of his subject area.
___ ___Is willing to give additional time to the pupil who needs help.
___ ___Utilizes techniques that challenge pupils to think for themselves; assigns adequate written work for students.
___ ___Designs and administers frequent examinations so as to stimulate the pupil's learning experience and evaluate his progress.
___ ___Shows evidence of a long-range but flexible program anticipating needs and interests.
___ ___Arranges the physical properties of the classroom attractively for a desirable learning environment.
___ ___Helps pupils to recognize, develop, and live by moral and spiritual values.

Teacher's Signature _____ Principal's Signature _____

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FOOTNOTES

[1] Rolfe's (1945) study relating A.C.E. scores of student teachers and successful performance in one or two room rural schools showed no correspondence; yet Rostker (1945), using a city sample, found substantial correlation. This would suggest that a teacher might serve effectively in one situation though not another and that, in consequence, teacher readiness should be differentially defined for each community. Even ignoring the differences between affluent and poor, there is evidence that the conditions for system-determined success with the poor alone may depend on whether the teacher's students be rural or urban. For the contrast, *see* "Perceived Problems of Teachers in Schools Serving Rural Disadvantaged Population: A Comparison with Problems Reported By Inner-City Teachers" (Cruickshank, *et al.*, 1968).

[2] According to Egerton (1967) the vast majority of teacher preparation programs are not even marginally concerned with producing graduates equipped for urban inner city assignments even though 80 per cent of America now lives in some 300 metropolitan centers. By their own admission, the 281 institutions responding to Egerton's survey indicated that they have been doing very little to ready their students for service within the disadvantaged community. Less than one in six institutions had made any substantial change in its curriculum for this purpose and only two in five specified intentions to do so. A survey by the Southwest Educational Development Laboratory (1968) involved 43 institutions of higher learning in Texas and Louisiana which together graduate 2/3 of the teachers within the two-state area. Among these institutions, 91 per cent have no specific undergraduate programs to prepare elementary teachers of disadvantaged children; 86 per cent do not require elementary majors to option courses or field experiences concerning the problems of deprived children; and in 65 per cent of the colleges such courses and field experiences are not even available.

[3] To be satisfied with the neighborhood and school in which one teaches is important for dissatisfied teachers not only perform less well than they might but often are difficult for children to please, a circumstance always inimical to achievement. At the beginning of the Preface Plan Project, 13 of 21 participants indicated they would decline an inner city assignment if given the option. Nine months later, 20 of 21 teachers expressed satisfaction with their location and elected to remain with ghetto children for the subsequent school year. This rate of teacher turnover (5 per cent) stands in marked contrast to the usual figure of 60 per cent. Moreover, 19 of 21 participants were ranked as average or above average by their principals. As an aggregate, these findings offer support to the assertion that the Preface Plan can in addition to preparing educators to do well in low-income neighborhoods also encourage their tenure in such positions.

[4] Recently, the authors contacted 20 urban universities that offer training programs for prospective inner city teachers to ascertain their use of valid screening procedures in candidate selection. In all but two instances, the reporting institutions have no meaningful selection standards currently in use or being researched.

John McNeil, head of supervised teaching and internship at U.S.L.A., reports all student teachers there are required to participate in the inner city program and that "we are now collecting data relative to correlations between the Minnesota Teacher Attitude Inventory, Sorenson's Stress Inventory, and particular training experiences prior to placement in inner city schools as predictors of retention in these schools." For an interim report, *see* McNeil's (1968) unpublished paper "Initial Teaching in Poverty versus Affluent Schools: Effect upon Teacher Stress, Attitude and Career Choice." In the Syracuse Urban Teacher Preparation Program, the forecast of success has been attempted with a modified interview designed to reveal openness and role playing tasks to assess classroom control and sensitivity. *Also see* "A Method for the Selection and Diagnosis of Fifth Year Urban Teaching Interns" (1967) by Robert Lesniak.

[5] The Allport-Vernon-Lindzey Study of Values, the Rosenzweig Picture-Association Study for Assessing Reactions to Frustration, The Myers-Briggs Type Indicator, and the Runner Studies of Attitude Patterns showed least promise in our analysis and were therefore eliminated. The reader is cautioned that these results are rather tentative and might be modified upon replication in other contexts.

[6] For an explanation of the stepwise regression technique, *see* Philip H. DuBois, *Multivariate Correlational Analysis.* New York: Harper and Brothers, 1957. Also, for a very insightful explanation concerning interpretation of stepwise regres-

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sion analysis, including the use of Venn Diagrams, *see* Richard C. Pugh, "The Partitioning of Criterion Score Variance Accounted for in Multiple Correlation," *American Educational Research Journal*, November 1968, *5*, 639-646.

[7] If one prefers to work with raw scores rather than standard scores, the following equations are used:

$$\hat{Y}_0 = A + \Sigma_{i=1}^{n} b_{0i} Y_i$$

This equation may also be written

$$\hat{Y}_0 = A + b_{01}Y_1 + b_{02}Y_2 + \ldots + b_{0n}Y_n$$

In the equation, $\hat{Y}_0$ is the score on the criterion in raw score form, A is a constant, the b's are coefficients used to weight the respective tests, and the Y's are scores on the respective tests in raw score form. Thus, from Table 2, a raw score regression equation may be written

$$\hat{Y}_0 = -4.162 + .204Y_1 + .021Y_2 + .112Y_3 - .116Y_4$$

[8] When the ratings of a teacher educator and principal serve as criteria, having more or less Achievement via Independence does not seem to influence the assessment of inner city performance whereas Achievement via Conformance contributes directly to recognition as an effective teacher. This poses the possibility that by omitting as an evaluative criterion the ability to achieve through collaboration, we may inadvertently be eliminating from education some candidates who could serve well in the classroom. In other words, Achievement via Independence—the criterion for success as a college student—may not prepare one for the collaborative role needed to succeed as a teacher. After college, unable to accommodate the teacher reward system by which satisfaction accrues from united effort rather than grade-getting behavior, some beginning educators leave the classroom for other occupations where the competitive orientation still applies and the self is celebrated. It should not be surprising that persons trained to achieve alone later find it difficult to succeed together. Yet somehow they must make the switch. So long as we train teachers to act like students, the transition to becoming a collaborative faculty member will be made by only a few.

[9] To favor Achievement via Conformance distresses some people who suppose its occurrence will necessarily be accompanied by a decline in creative behavior. In this study the facts seem otherwise; indeed that one can be a creative faculty member is shown by the high predictive value attributed to fluence on the Torrance Verbal-Figural scales and the femininity index of the California Psychological Inventory. Undoubtedly, at every level of schooling there is less group encouragement and reward of creative behavior than desirable. In our judgment, however, this does not suggest the need to promote a dissolution of group endeavors but rather that we must begin in kindergarten to honor divergent thinking as among the values and methods of collaboration. Unfortunately, up to now divergent thinking has had to occur mostly outside of groups.

[10] For a thorough discussion of factor analytic techniques we refer the reader to these sources. For a short introductory treatment, *see* Fred N. Kerlinger, *Foundations of Behavioral Research*. New York, Holt, Rinehart and Winston, Inc., 1965, Chapter 36. For an introductory book *see* Benjamin Fruchter, *Introduction to Factor Analysis*. Princeton, New Jersey, Van Nostrand, 1954. For a systematic treatment with breadth and depth, *see* Harry H. Harmon, *Modern Factor Analysis*. Chicago, University of Chicago Press, 1967.

[11] Cannonical correlation methods or multivariate analysis of variance methods may facilitate simultaneous evaluation of several criterion or dependent measures. For a useful reference on this subject, read T. W. Anderson's, *An Introduction to Multivariate Statistical Analysis*. New York: John Wiley and Sons, 1958.

[12] By way of partial remedy, Medley (1968) suggests "the proper function of the professional component in a teacher education program is to prepare each graduate to find out for himself what behaviors are effective for him" so that "he will go out into his first position with the expectation of learning at least as much during his initial year in service as he has learned during each year of preservice training. He will view his teaching certificate as a license to practice, rather than a release from any obligation to learn."

[13] By self-defined success we are not suggesting an emphasis on self-examination by introspection. On the contrary, we regard introspection as the weakest form of self-insight: to encourage it alone is to delimit the perception of self as held by others. The major purpose basing the existent and growing number of interaction

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analysis systems is precisely to facilitate a greater insight of one's behavior as viewed by students, colleagues, or supervisors. This kind of objective feedback meets the scientific conditions for reliable information about self. The new technology of computer-assisted instruction, objective coding systems for classroom behavior, and the press for team collaboration—these concerns will not go away simply because one is attached to the Greek ideal of meditation or self-inspection. In short, we still believe that Socrates dictum "Know thyself" is important for human development but the difference is that we now realize one can better know himself by learning of his estimate in the perception of others.

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